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Lee, Gahee; de Groot, Lynette; Ackerie, Antoinette; Van der Meij, Barbara S

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Patient-Generated Subjective Global Assessment Short Form is a Suitable Screening Tool for Identifying the Risk of Malnutrition in Outpatients with Cancer

Gahee Lee¹, Lynette De Groot^{2,3}, Antoinette Ackerie², Barbara van der Meij^{1,2,3}

¹ Nutrition and Dietetics Research Group, Faculty of Health Sciences and Medicine, Bond University, Contact Details: barbara.vandermeij@mater.org.au, +07-3163 6000

² Dietetics and Food Services, Mater Health, Brisbane, QLD, Australia

³ Mater Research Institute, University of Queensland, Brisbane, QLD, Australia

Background and Aim

Background

In cancer centres, where there is often a high prevalence of malnutrition, a screening tool that adequately identifies cancer patients at risk of malnutrition is necessary to ensure early identification, assessment, and timely nutrition intervention.

Aim

The aim of this study was to explore the prevalence of malnutrition in outpatients with cancer and to evaluate the agreement, sensitivity, and specificity of the Patient-Generated Subjective Global Assessment Short Form (PG-SGA SF) as compared to two nutrition assessment reference standards: the Patient-Generated Subjective Global Assessment (PG-SGA) global rating and the newly developed criteria for malnutrition by the Global Leadership Initiative on Malnutrition (GLIM).

Methods

In a weeklong observational, cross-sectional study of adult outpatients with cancer receiving IV day treatment at Mater Cancer Care Centre in Queensland, Australia, we assessed the PG-SGA SF (cut off score ≥ 3) and compared it to the PG-SGA global rating (A, B, C) and GLIM criteria (6 months weight loss $>5\%$; BMI $<$ age specific reference value). A sensitivity of $\geq 80\%$ and specificity of $\geq 60\%$ were deemed acceptable for the PG-SGA SF. The kappa coefficient (k) was calculated to evaluate the agreement between PG-SGA SF and PG-SGA global rating and GLIM criteria.

Results

Prevalence of Malnutrition

A total of 141 cancer outpatients (female 71%, 61.8 \pm 13.44 years, breast cancer 44%) consented to participate. According to the PG-SGA SF cut off score of ≥ 3 , there were 61 (46%) patients identified as at risk of malnutrition. According to the global rating of PG-SGA, 24 (17%) patients were assessed as malnourished versus 33 (25%) patients according to GLIM criteria. 16.3% and 0.7% were assessed as moderately (PG-SGA B) and severely (PG-SGA C) malnourished, respectively. (See Table 1).

Table 1. Categorisation of Malnutrition by PG-SGA Global Rating and GLIM Criteria

Category	Count (%) of patients within each category	
	PG-SGA global rating	GLIM criteria
Well-nourished	PG-SGA A	Not classified as ^a or ^b
	117 (83)	100 (75)
Malnourished	PG-SGA B+C	Moderate + Severe
	24 (17)	33 (25)
- Moderately malnourished	PG-SGA B	Stage 1 Moderate criteria ^a
	23 (16.3)	25 (19)
- Severely malnourished	PG-SGA C	Stage 2 Severe criteria ^b
	1 (0.7)	8 (6)

a. 5-10% weight loss in the past 6 months or 10-20% beyond 6 months or BMI <20 if <70 yr, <22 if ≥ 70 yr.

b. $>10\%$ weight loss within the past 6 months or $>20\%$ beyond 6 months or BMI <18.5 if <70 yr, <20 if ≥ 70 yr.

Table 2. Sensitivity, Specificity, and Kappa Coefficient of PG-SGA SF as Compared to PG-SGA Global Rating and GLIM Criteria

	Reference	Sensitivity (%)	Specificity (%)	k ^a
PG-SGA SF (≥ 3) ^b	GLIM criteria	42	53	-0.42
	PG-SGA global rating	86	61	0.30

a.Kappa coefficient.

b.PG-SGA SF cut off score of 3. PG-SGA SF <3 : patients identify as not at risk of malnutrition. PG-SGA SF ≥ 3 : patients identify as at risk of malnutrition.

Agreement, Sensitivity, Specificity, and Kappa Coefficient of PG-SGA SF

The PG-SGA SF had a sensitivity of 86% and specificity of 61% as compared to PG-SGA (see Table 2). The agreement between these tools was 'Fair' ($k=0.30$). PG-SGA SF had a relatively low sensitivity and specificity as compared to the GLIM criteria (42% and 53%, respectively) and a 'Poor' agreement ($k<0$).

Conclusion

Approximately one out of five outpatients with cancer are malnourished. PG-SGA SF compared to PG-SGA meets the professional standard and could be a suitable nutrition screening tool in outpatients with cancer. The GLIM criteria are different to PG-SGA global ratings and further research is required to determine their value in oncology outpatients.

